

CLAIMS

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1. Reader (10) of chip card (50, 51, 53, 55) comprising:
- a central processing unit (20) comprising means (MP2, MEM2, PG20, 23) for emitting and receiving, on a communication bus (60), binary messages having a first format determined by a communication protocol (ISO 7816) for contact chip card,
 - a card receiving device (40) comprising a contact card connector (42) connected to the central processing unit (20) by means of the communication bus (60), and
 - a read head (30) for contactless chip card (53), comprising a serial interface (31), characterized in that:
 - the serial interface (31) of the contactless read head (30) is directly connected at least to a data wire (I/O) of the communication bus (60), and
 - the contactless read head (30) is arranged in a hardware and software way so as not to respond to a contact chip card activation command received on the serial interface (31), and to respond to a specific activation command (ACTIV) of the contactless read head different from a contact chip card activation command.
2. Reader according to claim 1, wherein the contactless read head (30) is further electrically supplied by a supply wire (Vcc) of the communication bus (60).
3. Reader according to ^{Claim 1} ~~one of the claims 1 and 2~~, wherein the contactless read head (30) comprises means (MP1, PG39) for being set into an inhibition state at its power-on, and for leaving the inhibition state when receiving said specific activation command (ACTIV).
4. Reader according to claim 3, wherein the central processing unit (20) comprises means (MP2, PG20) for performing the following

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 operations when receiving a detection signal (DET) of the presence of a card in the reader:

- sending, on the communication bus (60), a contact card activation command, and waiting for a first response,

5 - if the first response is received, establishing or trying to establish a communication with a contact card,

- if the first response is not received in a predetermined time interval, sending said specific activation command (ACTIV) of the contactless read head on the communication bus (60), and waiting
 10 for a second response,

- if the second response is received, establishing or trying to establish a communication with a contactless card.

Claim 1
 5. Reader according to ~~one of the claims 1 to 4~~, wherein said
 15 contact card activation command is a reset command according to the standard ISO 7816.

Claim 1
 6. Reader according to ~~one of the claims 1 to 5~~, wherein said
 specific activation command (ACTIV) of the read head is a command
 20 which is likely to be never sent to a contact chip card.

Claim 1
 7. Reader according to ~~one of the claims 1 to 5~~, wherein said
 specific activation command (ACTIV) of the read head is a signal
 sent on at least one wire of the communication bus (60) which is not
 25 used by contact chip cards.

Claim 1
 8. Reader according to ~~one of the claims 1 to 7~~, wherein the
 contactless read head (30) comprises means (MP1, PG30) for
 converting messages received with the first format on the serial
 interface (31) *into* messages having a second format determined by a
 communication protocol (P_{TM}) for contactless chip cards, and, vice
 versa, converting messages received with the second format into
 messages with the first format.

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Sub B2
 9. Reader according to ^{claim} ~~one of the preceding claims~~, characterized in that the contactless read head (30) is integrated in a small size circuit arranged close to or inside the card-receiving device (40).

10. Read head (30) for contactless chip card, comprising a serial interface (31) for receiving or emitting messages with a first format determined by a communication protocol for contact chip card (ISO 7816), characterized in that it comprises means (MP1, PG39) for being set into an inhibition state at its power-on, and for leaving the inhibition state when receiving a specific activation command (ACTIV) received on the serial interface (31).

11. Read head according to claim 10, wherein the inhibition state is so that the read head does not respond to any command except to said activation command (ACTIV) of the read head.

12. Read head according to claim 10, wherein the inhibition state is so that that the read head does not respond to any command except to said activation command (ACTIV) of the read head or a chip card activation command (RST).

13. Read head according to ^{claim} ~~one of the claims 10 to 12~~, characterized in that it comprises means for returning to the inhibition state when receiving a deactivation command (DEACTIV) received on the serial interface.

14. Read head according to ^{claim} ~~one of the claims 10 to 13~~, characterized in that it comprises means (MP1, PG36, PG37) for converting messages received with the first format on the serial interface into messages having a second format determined by a communication protocol for contactless chip card (P_{cm}), and, vice

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versa, converting messages received with the second format into messages with the first format and responding to a specific activation command (ACTIV) of the contactless read head different from a contact chip card activation command.

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